



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,868	02/27/2004	David G. Lawrence	12342-13	1165

7590 04/10/2006

Craig A. Summerfield
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER

MULL, FRED H

ART UNIT PAPER NUMBER

3662

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/789,868	Applicant(s) LAWRENCE ET AL.	
	Examiner Fred H. Mull	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 17 and 27-37 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 9, 13-15 and 25 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 7, 8, 10-12, 16, 18-24 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 4, 9, 13-15, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson.

In regard to claim 1, Johnson discloses:

a plurality of antennas (12-15, Fig. 1); and

a GPS receiver (col. 1, line 18) having:

a plurality of primary filters, one primary filter for each antenna of the plurality of antennas, each filter operable to obtain information from a respective one of the plurality of antennas at a primary frequency (22; col. 3, lines 44-46); and

a fewer number of secondary filters than primary filters, the secondary filters operable to obtain information from the plurality of antennas at one or more secondary frequencies (126, 138, Fig. 2), the secondary filter connectable with the plurality of antennas, where the secondary filter is connected to the antennas via intermediary

Art Unit: 3662

components (in much the same way applicant's secondary filters are connected to the antennas via intermediary components 104 and 112 in applicant's Fig. 1, and intermediary components 204 and 216 in applicant's Fig. 2).

In regard to claim 4, Johnson further discloses the fewer number of secondary filters equals a number of secondary frequencies (Fig. 1, where a first secondary frequency is created after mixer chain 32-36, and a second secondary frequency is created after mixer chain 52-56. There are thus two secondary frequencies, and two secondary filters, 126 and 138.)

In regard to claim 15, Johnson further discloses a second RF section operable to obtain the second frequency signals from the RF signals from at least two of the antennas (Fig. 2).

In regard to claim 9, Johnson further discloses a processor operable to obtain position information as a function of the information at the primary frequency and the information at the secondary frequency (206, Fig. 3; col. 8, line 57 to col. 9, line 7).

In regard to claim 13, Johnson further discloses the processor is operable to determine a position as a function of code phase and carrier phase of the information at the primary and secondary frequency (col. 8, line 57 to col. 9, line 7).

In regard to claims 14 and 25, Johnson further discloses a clock common to the plurality of primary and secondary RF sections (col. 9, lines 5-7).

In regard to claim 27, Johnson further discloses a common filter (108) multiplexed with each of the plurality of antennas (56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson and in further view of Curry.

Johnson discloses using both a code phase filter (126) and a carrier phase filter (138).

Curry teaches that code phase only GPS positioning is known, and that this gives an accuracy of at least 3-6 meters (p. 24). For applications where this accuracy is sufficient, it would have been obvious to use a receiver without the unneeded carrier phase capability, thus saving money in receiver cost, which would require fewer components, and saving in power/extending battery life, since the extra components/processing would not be necessary. In this case, only the code phase filter (126) would be used, and there would be a single secondary filter.

Allowable Subject Matter

4. Claim(s) 6, 17, and 27-37 is/are allowed.
5. Claim(s) 3, 5, 7-8, 10-12, 16, 18-24, and 26 is/are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

Art Unit: 3662

independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on Monday through Friday from approximately 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull
Examiner
Art Unit 3662

fhm



THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600